

REMARKS

Claims 1-5, 10, 20, 22, 25, 26, 28-31, 34-70, 72, 74-80, 85, 95, 97, 98, 100, 103-105, 109, 113-151, 153, and 155-165 are currently pending in this application. Claim 2 is amended herein. Claims 1, 3-5, 10, 20, 22, 25, 26, 28-31, 34-44, 47-70, 72, 74-76, 78-80, 85, 95, 97, 98, 100, 103-105, 109, 113-125, 128-151, 153, and 155-165 stand withdrawn. Claims 6-9, 11-19, 21, 23, 24, 27, 32, 33, 71, 73, 81-84, 86-94, 96, 99, 101, 102, 106-108, 110-112, 152 and 154 were previously cancelled without prejudice or disclaimer as to the claimed subject matter. Claims 45, 46, 126, and 127 are cancelled herein without prejudice or disclaimer as to the claimed subject matter. Applicants respectfully reserve the right to prosecute the subject matter of these cancelled claims in one or more continuation or divisional applications. New claims 166-174 are presented for entry and consideration in this application. Support for the claim amendment and new claims can be found throughout the application as originally filed, *inter alia*, on page 11, lines 1-29; on page 16, lines 5-13; and in Examples 4-12. Accordingly, Applicants submit that no new matter is introduced into the application by way of the new claims. Claims 1-5, 10, 20, 22, 25, 26, 28-31, 34-44, 47-70, 72, 74-80, 85, 95, 97, 98, 100, 103-105, 109, 113-125, 128-151, 153, and 155-165 will be pending upon entry of the current amendments.

Objections

I. Drawings

The specification was objected to because the figures, and specifically figures 6, 7, 8, and 9, are purported to fail to comply with the requirements of 37 CFR 1.821-1.825. Applicants submit replacement drawings of figures 6, 7, 8, and 9, incorporating the sequence identifiers. Applicants respectfully request reconsideration and withdrawal of this objection.

II. Replacement Title

The application was objected to as allegedly having a non-descriptive title. Applicants have amended the title of the application herein, and respectfully request reconsideration and withdrawal of this objection.

III. Embedded Hyperlinks

The application was objected to as containing embedded hyperlinks. Applicants have amended the specification herein to remove the embedded hyperlinks, thereby rendering this objection moot.

IV. Sequence Identifiers

The application was objected to as lacking sequence identifiers. Applicants have amended the specification herein to introduce missing sequence identifiers, thereby rendering this objection moot.

V. Claims 46 and 127

Claims 46 and 127 were objected to as directed to nonelected inventions (IPT1 and ARGOS). Claims 46 and 127 are cancelled herein, thereby rendering this objection moot.

Rejections

35 U.S.C. § 112, 2nd Paragraph

Claims 45, 46, 126, and 127 were rejected under 35 U.S.C. § 112, 2nd paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 45, 46, 126, and 127 are cancelled herein without prejudice or disclaimer, thereby rendering this objection moot. With respect to the statement in the office action that “MNT” is an arbitrary acronym, Applicants respectfully disagree and submit that this term would be recognized by one of skill in the art at the time of filing. *See for example*, page 33, lines 25-26 of the specification, which state: “MNT/ARF2 will be referred to as MNT in the remainder of this document. The MNT gene = At5g62000, accession no. NM_125593.”

35 U.S.C. §§ 102(b), (e)

Claims 2, 45, 77, and 126 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by the disclosure of U.S. Patent No. 7,612,253 to Harada *et al.* (“Harada”). Furthermore, claims 2, 45, 46, 77, 126, and 127 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by the disclosure of Tiwari *et al.* (“Tiwari”). Those rejections, to the extent applicable to the claims as amended herein and the new claims, are respectfully traversed. It is noted that claims 45, 46, 126, and 127 are cancelled herein without prejudice or disclaimer.

Without acquiescing in the merits of the anticipation rejections in light of Harada and Tiwari, Applicants have amended claim 2 to require that the method of controlling cell proliferation in the integuments and/or seed coats of a plant comprises increasing or decreasing the expression of the *mnt* gene (or an orthologue thereof) in the integuments and/or seed coat of a plant or plant propagating material.

As discussed in the application, Applicants identified the mutant, *megaintegumenta-1* (*mnt-1*), in a screen for large seeds yielded by a population of EMS (ethyl methanesulfonate)-mutagenized *Arabidopsis thaliana* in the Col-3 _accession. Mature seeds produced by a seed parent homozygous for the *mnt-1* mutation are larger and more pointed than wild-type, with extra cells in the seed coat, and contain larger embryos. *See* specification, page 24, lines 5-12. Applicants observed that a primary difference between *mnt-1* and wild-type seeds is that the mutant seeds contain more cells in the seed coat. A comparison of ovule development on *mnt-1* and wild-type plants show that *mnt-1* ovules are of normal size and morphology until they are near maturity, at which time Applicants have observed that both the inner and outer integuments of *mnt-1* ovules are significantly longer than in wild-type, primarily due to a significantly greater number of cells. *See* specification, page 29, line 31 extending to page 30, line 2; and Figure 2.

Under 35 U.S.C. § 102, the Patent Office bears the burden of presenting at least a *prima facie* case of anticipation. In re King, 801 F.2d 1324, 1326 (Fed. Cir. 1986). Anticipation requires that a prior art reference disclose, either expressly or under the principles of inherency, each and every element of the claimed invention. Celeritas Tech., Ltd., v. Rockwell Int’l Corp., 150 F.3d 1354, 1361 (Fed. Cir. 1998). The prior art reference must disclose all of the claim elements arranged or combined in the same way as recited in the claim. Net MoneyIN, Inc. v.

VeriSign, Inc., 545 F.3d 1359, 1369 (Fed. Cir. 2008). “In addition, the prior art reference must be enabling.” Akzo N.V. v. U.S. International Trade Commission, 808 F.2d 1471, 1479 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987). That is, the prior art reference must sufficiently describe the claimed invention so as to have placed the public in possession of it. In re Donohue, 766 F.2d 531, 533 (Fed. Cir. 1985). Such possession is effected only if one of ordinary skill in the art could have combined the disclosure in the prior art reference with his/her own knowledge to make the claimed invention. Id.

A. *Harada does not teach or suggest the claimed invention*

The office action states that Harada anticipates the claimed invention under 35 U.S.C. § 102(e). According to the office action, “Harada *et al.* teach a method which comprises the step of transforming a plant, or plant propagating material, with a nucleic acid molecule comprising at least one 35S promoter regulatory sequence capable of directing expression of at least one nucleic acid sequence encoding a FUS3 protein.” See office action, page 5. This rejection, to the extent applicable to the claims as amended herein and the new claims, are respectfully traversed.

Claim 2, and the claims depending therefrom, are amended herein to recite in pertinent part, expression of the mnt gene or an orthologue thereof in the integuments and/or seed coat of a plant or plant propagating material. Applicants submit that Harada does not teach all of the elements of the claimed invention because Harada does not teach expression of the mnt gene or an orthologue thereof. Moreover, Harada certainly does not teach or suggest the expression of the mnt gene or an orthologue thereof in the integuments and/or seed coat of a plant or plant propagating material as part of a method of controlling cell proliferation. Accordingly, Harada does not anticipate the claimed invention.

B. *Tiwari does not teach or suggest the claimed invention*

The office action states that Tiwari anticipates the claimed invention under 35 U.S.C. § 102(b). According to the office action, “Tiwari *et al.* teach a method comprising the step of transforming carrot cells with a nucleic acid molecule comprising at least one 35S promoter

regulatory sequence capable of directing expression of at least one nucleic acid sequence that includes or is derived from the auxin response factor 2 (ARF2) gene ... The auxin response factor 2 (ARF2) gene is the same as the *MNT* gene ...” See office action, page 7. This rejection, to the extent applicable to the claims as amended herein and the new claims, are respectfully traversed.

Claim 2, and the claims depending therefrom, are amended herein to recite in pertinent part, increasing or decreasing expression of the *mnt* gene or an orthologue thereof in the integuments and/or seed coat of a plant or plant propagating material, as a step in a method of controlling cell proliferation. Applicants submit that Tiwari does not teach all of the elements of the claimed invention because Tiwari does not teach increasing or decreasing expression of the *mnt* gene or an orthologue thereof in the integuments and/or seed coat of a plant or plant propagating material. Moreover, Tiwari certainly does not teach or suggest increasing or decreasing the expression of the *mnt* gene or an orthologue thereof in the integuments and/or seed coat of a plant or plant propagating material as part of a method of controlling cell proliferation. Accordingly, Tiwari does not anticipate the claimed invention.

Accordingly, Applicants submit that neither Harada nor Tiwari anticipate claim 2 or any claim depending therefrom at least in light of the instant claim amendments and remarks presented herein. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejections of claim 2 and the claims depending therefrom under 35 U.S.C. §§ 102(b), (e), as allegedly anticipated by Harada or Tiwari.

CONCLUSION

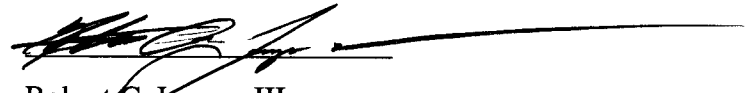
An indication of allowance of all claims is respectfully solicited. Early notification of a favorable consideration is respectfully requested. In the event any issues remain, Applicant would appreciate the courtesy of a telephone call to their counsel to resolve such issues and place all claims in condition for allowance.

Respectfully submitted,

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Dated: September 16, 2010

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